

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-4. (canceled)

5. (currently amended) ~~The anomaly diagnosis system of Claim 3,~~

~~wherein,~~ An anomaly diagnosis system provided in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the anomaly diagnosis system comprising:

warming-up means for executing warming-up of at least one of the engine and the component;

pre-start state detecting means for detecting a pre-start state by detecting a preparation operation for a start of the engine, wherein the warming-up means executes the warming-up prior to the start of the engine when the pre-start state detecting means detects the pre-start state;

anomaly detecting means for detecting an anomaly of the pre-start state detecting means; and

vehicle state detecting means for detecting a vehicle state,

wherein the pre-start state detecting means detects the pre-start state based on a given signal,

the anomaly detecting means detects the anomaly of the pre-start state detecting means based on the given signal and the vehicle state detected by the vehicle state

detecting means,

the pre-start state detecting means detects the pre-start state based on an ON-signal or an OFF-signal of a driver seat switch as the given signal, wherein the ON-signal or OFF-signal of the driver seat switch indicates whether a driver is seated on a driver seat or not, respectively, and

in a case where the OFF-signal of the driver seat switch is not detected and when it is detected that the driver retires from the vehicle, the anomaly detecting means detects an anomaly of the pre-start state detecting means.

6.-8. (canceled)

9. (currently amended) ~~The anomaly diagnosis system of Claim 8,~~

~~wherein~~ An anomaly diagnosis system provided in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the anomaly diagnosis system comprising:

warming-up means for executing warming-up of at least one of the engine and the component;

pre-start state detecting means for detecting a pre-start state by detecting a preparation operation for a start of the engine, wherein the warming-up means executes the warming-up prior to the start of the engine when the pre-start state detecting means detects the pre-start state;

anomaly detecting means for detecting an anomaly of the pre-start state detecting

means; and

vehicle state detecting means for detecting a vehicle state,

wherein the pre-start state detecting means detects the pre-start state based on a given signal,

the anomaly detecting means detects the anomaly of the pre-start state detecting means based on the given signal and the vehicle state detected by the vehicle state detecting means;

the pre-start state detecting means detects the pre-start state based on a door opening/closing switch signal as the given signal, wherein the door opening/closing switch signal indicates whether a door of the vehicle is open or closed;

a state of a door-handle manipulation switch is detected by the vehicle state detecting means, and

~~wherein,~~ when the pre-start state is not detected based on the door opening/closing switch signal for a given period including a given time at which a door-handle is operated based on the state of the door-handle manipulation switch, the anomaly detecting means detects an anomaly of the pre-start state detecting means.

10. (canceled)

11. (currently amended) ~~The anomaly diagnosis system of Claim 10,~~

wherein An anomaly diagnosis system provided in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the anomaly diagnosis system comprising:

warming-up means for executing warming-up of at least one of the engine and the component;

pre-start state detecting means for detecting a pre-start state by detecting a preparation operation for a start of the engine, wherein the warming-up means executes the warming-up prior to the start of the engine when the pre-start state detecting means detects the pre-start state;

anomaly detecting means for detecting an anomaly of the pre-start state detecting means; and

vehicle state detecting means for detecting a vehicle state,

wherein the pre-start state detecting means detects the pre-start state based on a given signal,

the anomaly detecting means detects the anomaly of the pre-start state detecting means based on the given signal and the vehicle state detected by the vehicle state detecting means,

the pre-start state detecting means detects the pre-start state based on a door-handle manipulation switch signal as the given signal, wherein the door-handle manipulation switch signal indicates an operation state of a door-handle of the vehicle;

a state of a door opening/closing switch is detected by the vehicle state detecting means, and

~~wherein,~~ when the pre-start state is not detected based on the door-handle switch signal for a given period including a given time at which the door is operated based on the state of the door opening/closing switch, the anomaly detecting means detects an anomaly of the pre-start state detecting means.

12. (previously presented) An anomaly diagnosis system provided in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the anomaly diagnosis system comprising:

warming-up means for executing warming-up of at least one of the engine and the component;

pre-start state detecting means for detecting a pre-start state by detecting a preparation operation for a start of the engine, wherein the warming-up means executes the warming-up prior to the start of the engine when the pre-start state detecting means detects the pre-start state; and

anomaly detecting means for detecting an anomaly of the pre-start state detecting means;

wherein, when the anomaly of the pre-start state detecting means continues for more than a given period, the anomaly detecting means diagnoses the pre-start state detecting means with a final anomaly.

13. (previously presented) An anomaly diagnosis system provided in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the anomaly diagnosis system comprising:

warming-up means for executing warming-up of at least one of the engine and the component;

pre-start state detecting means for detecting a pre-start state by detecting a preparation operation for a start of the engine, wherein the warming-up means executes the warming-up prior to the start of the engine when the pre-start state detecting means detects the pre-start state; and

anomaly detecting means for detecting an anomaly of the pre-start state detecting means;

wherein the anomaly detecting means continuously increments a counter while the anomaly of the pre-start state detecting means is being detected, and

wherein, when the counter exceeds a given count, the anomaly detecting means diagnoses the pre-start state detecting means with a final anomaly.

14.-17. (canceled)

18. (currently amended) ~~The method of Claim 17,~~

~~wherein,~~ A method of diagnosing an anomaly in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the method comprising:

executing warm-up of at least one of the engine and the component;
detecting, with a pre-start state detector, a pre-start state by detecting a
preparation operation for a start of the engine, wherein the warm-up is executed prior to
the start of the engine when the pre-start state is detected; and
detecting an anomaly of the pre-start state detector; and
detecting a vehicle state,
wherein the pre-start state detector detects the pre-start state based on a given
signal,
the anomaly of the pre-start state detector is detected based on the given signal
and the detected vehicle state,
the pre-start state detector detects the pre-start state based on an ON-signal or an
OFF-signal of a driver seat switch as the given signal, wherein the ON-signal or OFF-
signal of the driver seat switch indicates whether a driver is seated on a driver seat or not,
respectively; and
in a case where the OFF-signal of the driver seat switch is not detected and when
it is detected that the driver retires from the vehicle, an anomaly of the pre-start state
detector is detected.

19.-20. (canceled)

21. (currently amended) ~~The method of Claim 20,~~ A method of diagnosing an anomaly in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the method comprising:

executing warm-up of at least one of the engine and the component;

detecting, with a pre-start state detector, a pre-start state by detecting a preparation operation for a start of the engine, wherein the warm-up is executed prior to the start of the engine when the pre-start state is detected; and

detecting an anomaly of the pre-start state detector; and

detecting a vehicle state,

wherein the pre-start state detector detects the pre-start state based on a given signal,

the anomaly of the pre-start state detector is detected based on the given signal and the detected vehicle state, and

the pre-start state detector detects the pre-start state based on a door opening/closing switch signal as the given signal, wherein the door opening/closing switch signal indicates whether a door of the vehicle is open or closed;

wherein a state of a door-handle manipulation switch is detected, and

wherein, when the pre-start state is not detected based on the door opening/closing switch signal for a given period including a given time at which a door-handle is operated based on the state of the door-handle manipulation switch, the anomaly of the pre-start state detector is detected.

22. (canceled)

23. (currently amended) ~~The method of Claim 22,~~ A method of diagnosing an anomaly in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the method comprising:

executing warm-up of at least one of the engine and the component;

detecting, with a pre-start state detector, a pre-start state by detecting a preparation operation for a start of the engine, wherein the warm-up is executed prior to the start of the engine when the pre-start state is detected; and

detecting an anomaly of the pre-start state detector; and

detecting a vehicle state,

wherein the pre-start state detector detects the pre-start state based on a given signal,

the anomaly of the pre-start state detector is detected based on the given signal and the detected vehicle state, and

the pre-start state detector detects the pre-start state based on a door-handle manipulation switch signal as the given signal, wherein the door-handle manipulation switch signal indicates an operation state of a door-handle of the vehicle;

wherein a state of a door opening/closing switch is detected, and

wherein, when the pre-start state is not detected based on the door-handle switch signal for a given period including a given time at which the door is operated based on the state of the door opening/closing switch, an anomaly of the pre-start state detector is

detected.

24. (previously presented) A method of diagnosing an anomaly in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the method comprising:

executing warm-up of at least one of the engine and the component;

detecting, with a pre-start state detector, a pre-start state by detecting a preparation operation for a start of the engine, wherein the warm-up is executed prior to the start of the engine when the pre-start state is detected; and

detecting an anomaly of the pre-start state detector; and

detecting a vehicle state,

wherein the pre-start state detector detects the pre-start state based on a given signal,

the anomaly of the pre-start state detector is detected based on the given signal and the detected vehicle state, and

when the anomaly of the pre-start state detector continues for more than a given period, the pre-start state detector is diagnosed with an anomaly condition.

25. (previously presented) A method of diagnosing an anomaly in a vehicle having an internal combustion engine and a component having an operative relationship with the engine, the method comprising:

executing warm-up of at least one of the engine and the component;

detecting, with a pre-start state detector, a pre-start state by detecting a preparation operation for a start of the engine, wherein the warm-up is executed prior to the start of the engine when the pre-start state is detected; and

detecting an anomaly of the pre-start state detector; and

detecting a vehicle state,

wherein the pre-start state detector detects the pre-start state based on a given signal,

the anomaly of the pre-start state detector is detected based on the given signal and the detected vehicle state, and

a counter is continuously incremented while the anomaly of the pre-start state detector is being detected, and

when the counter exceeds a given count, the pre-start state detector is diagnosed with an anomaly condition.

26.-29. (canceled)